

REMARKS/ARGUMENTS

The Final Office Action dated March 31, 2010 and the references cited therein have been carefully considered. In response to the Office Action, Applicant has amended Claims 1 and 7, and added new Claims 21-23 which, when considered with the remarks set forth below, are deemed to place the case with Claims 1-13 and 20-23 in condition for allowance. Applicant has also concurrently filed herewith a Request for Continued Examination (RCE).

Claim Rejections 35 USC §112

In the Office Action, Claim 20 has been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner states that the specification does not describe “the central core part, the second core part and the movable wall part define substantially parallel mold cavities therebetween,” as defined in Claim 20.

Applicants respectfully traverse this rejection. Applicants respectfully submit that, while not explicitly expressed in these terms, the specification implicitly describes an arrangement of the central core part, the second core part and the movable wall part in such a way that parallel mold cavities are defined. In particular, the specification describes the movable wall part as moving in a direction toward the central core part and the second core part. The specification further describes the movable wall part as having a “surface facing the second core part 27 [that] has the form of the outside of the respective part of the longitudinal wall 3 [of the crate].” The crate is described as having a double outer wall. Therefore, it is implicit that the central core part, the second core part and the movable wall part define substantially parallel mold cavities therebetween, as defined in Claim 20. Accordingly, it is respectfully requested that the §112 rejection to Claim 20 be withdrawn.

Claim Rejections 35 USC §103

Further in the Office Action, the Examiner has maintained his rejection of Claims 1-6 and 10-12 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,905,740 to Lovejoy et al. in view of Japanese Patent No. JP57-115330 to Kumazaki. The Examiner has

now also set forth a new grounds of rejection for Claims 1-9, 11-13 and 20 under 35 U.S.C. 103(a) as being unpatentable over newly cited U.S. Patent No. 4,025,022 to Theysohn et al. in view of the Japanese Kumazaki patent.

In response, Applicant has amended independent Claims 1 and 7 to define features not found in the prior art. Applicant has also added new dependent Claims 21-23, which define additional features not found in the prior art.

Amended Independent Claims 1 and 7

Applicant has amended independent Claims 1 and 7 to further clarify the structural arrangement of the movable wall part within the mold. In particular, Claims 1 and 7 have been amended to define a movable wall part that is moved within a closed mold after the mold has been closed and after plastic has been injected into the mold cavity. Claims 1 and 7 have also been amended to further clarify that the plastic injected into the mold cavity does not fill the entire mold cavity when the movable wall part is in its first retracted position. It is respectfully submitted that none of the cited prior art references, taken alone or combined, teaches or suggests these features.

Claims 1 and 7 of the present application define a mold in which at least one movable wall part is provided which can be moved between first and second positions within the mold cavity when the mold is in a closed position. The movable wall part forms a mold cavity which is larger than the product forming volume when the mold wall part is in the retracted position, and further forms a smaller mold cavity matching the product forming dimensions when the movable wall part is in the forward position. When the wall part is in its retracted position, the mold cavity is not entirely filled with plastic.

In rejecting Claim 1, the Examiner first refers to the Lovejoy patent in view of the Japanese patent to Kumazaki. The Lovejoy patent discloses a mold for holders with openings in sides thereof, wherein the mold has movable core elements for releasing the product after molding. As noted by the Examiner, the wall parts disclosed in the Lovejoy patent cannot be moved with the mold closed.

The Kumazaki patent discloses a mold having two opposite side walls (17) that are movable in a direction towards each other between two mould halves (11, 12). The mold

cavity is entirely filled with plastic and the side walls (17) are heated and are in full contact with the still hot and molten plastic. After the mold cavity is completely filled with the plastic, the walls (17), which are still in full contact with the plastic, are moved forward for following the shrinkage of the plastic during cooling. These walls (17) do not (re)distribute the plastic within the mold cavity, nor do they stay apart from the plastic within the mold cavity at any time after completely filling of the mold cavity. On the contrary, since the purpose of the Kumazaki patent is to prevent bubbles within a thick injection molded product, it is essential according to the teaching of the Kumazaki patent that these wall parts stay in contact with the cooling plastic at all times. This is also the case in the cited Lovejoy patent, wherein the movable wall parts will always be in contact with the plastic, whereas since that holder is thin walled the shrinkage will be negligible and is at least not a problem addressed in Lovejoy.

For these reasons there is no reason for a person skilled in the art, starting from the Lovejoy patent, to orientate toward the Kumazaki patent, since these two patents address entirely different problems. Therefore, these references are clearly non-analogous art. More particularly, the Kumazaki patent is concerned with preventing blow holes and shrinkage holes in thick wall injection molding of products. In stark contrast, the Lovejoy patent does not even mention this problem, but is instead related to injection molding of thin walled holders with openings provided in non-releasing directions. They are therefore not in the same field.

Moreover, even if one skilled in the art would somehow look to the Kumazaki patent, (not knowing what problem to solve), he would still not know what to do, and if he would consider replacing the collapsible core disclosed in the Lovejoy patent by the walls (17) of Kumazaki, he would, at best, end up with slidable parts of the collapsible core, which would still be in full contact with the plastic at all times. This would therefore never result in a mold of the present invention.

In rejecting Claim 7, the Examiner cites a combination of the Theysohn patent in view of the Kumazaki patent. It is respectfully submitted that such combination does not teach or suggest all of the features of amended Claim 7.

The Theysohn patent discloses a mold for "double walled" crates. The present invention is an improvement of the molds of this type. The Theysohn patent discloses a mold in which the sides of the crate are formed by mold parts that consist of two wedge shaped elements slidable over each other in order to pull the inner one of the two sideways away from the product formed when the mold is opened. Such structure is not materially different from the collapsible core disclosed in the Lovejoy patent.

The Examiner argues with respect to members (9) that such members would move within the mold cavity when the mold is in the closed position. Applicants respectfully disagree and further submit that such movement would be impossible.

Specifically, the elements (9) are provided for forming a hollow portion of the "double walled" wall of the crate, above the handle opening formed by the extension (7). The element (9) is carried (is an integral part of) the thicker part resting directly on the extension (7). As can be seen in the upper left portion of Figure 1 of the Theysohn patent, above this thicker part is enclosed firmly between the wall of the core element (12) to one side and the wall of the movable wall part (slide 4) carrying the extension (7) on the opposite other side. Therefore the element (9) cannot move when the slide is in the "product forming" position, which is the case when the mold is closed. Indeed, there is not even a space for this movable wall part 4 to move when the mold halves are brought together. Thus the element (9) is in a fixed position when the mold is closed.

The Examiner indicates that the line (19) designates the path of the element (9), but this line is the path of element (9) only when the mold is open. It is positioned prior to injection and is moved out of the mold together with the product (during which the mould obviously also has to be open).

The Examiner further states that, according to Theysohn, "when the mould is closed sliders (9) are pressed by cam (13) through compression plate (14) on slider (9) against urging of the spring (15) in an inward direction." However, this section of the Theysohn patent does not describe an active movement of the element (9) when the mold is closed. Quite the contrary, as described above, the element (9) cannot move within the closed mold, especially not in an inward direction. It is locked in place by the slide (4) and the core (12) and cannot move until the mold is opened again.

In any event, as set forth above, Applicant has amended independent Claims 1 and 7 to make clear that the movable wall part moves after the mold is closed to clearly distinguish from any interpretation taken from the Theysohn patent in which the element (9) can be moved "during the movement of closing" of the mold. Thus, according to amended Claims 1 and 7, the mold is brought into a closed position first and then the movable wall parts are moved. Such feature is clearly not found in the Theysohn patent.

Turning to the cited Kumazaki patent, as discussed in detail above, this patent addresses an entirely different problem than that of the Theysohn patent and involves an entirely different mold and product to be formed. There is no motivation to combine, nor is there any indication for the skilled person as to how he should combine the references in order to come to the present invention. Moreover, the result would still not be the same. Therefore, it is respectfully submitted that the unlikely combination of Theysohn with Kumazaki would not lead to the present invention.

Nevertheless, Applicant has still further amended Claims 1 and 7 to define a mold cavity formed by a movable wall part, wherein, when the movable wall part is in its retracted position, the plastic injected into the mold cavity will not entirely fill the entire cavity. Such feature clearly distinguishes over all of the cited Theysohn, Kumazaki and Lovejoy references.

Therefore, for all of the foregoing reasons, it is respectfully submitted that Claims 1 and 7, and the claims that depend therefrom, patentably distinguish over the prior art.

New dependent Claims 21-23

As mentioned above, Applicant has also added new dependent Claims 21-23, which are believed to set forth still further features not found in the prior art. Accordingly, in view of these additional features, it is respectfully submitted that new dependent Claims 21-23 patentably distinguish over the prior art.

In particular, new dependent Claim 21 defines a moveable wall part having a first inclined surface disposed on a rear side thereof, and wherein the mold further includes a first wedge and a first drive means for translating the first wedge in a direction parallel to the first direction of movement. The first wedge is slidably supported on a first running surface

disposed on one of the first and second mold parts and the first wedge has an inclined surface cooperating with the first inclined surface of the movable wall part for moving the wall part in the second direction of movement when the first wedge is translated by the first drive means. None of the cited references, taken alone or combined, discloses a wedge slidably supported on a first running surface disposed on one of the first and second mold parts, as defined in new Claim 21.

New Claim 22 depends from new Claim 21 and further defines a second inclined surface disposed on the movable wall part, wherein the mold further includes a second wedge and a second drive means for translating the second wedge in a direction parallel to the first direction of movement, but opposite the direction of movement of the first wedge. The second wedge is slidably supported on a second running surface disposed on the other of the first and second mold parts and the second wedge has an inclined surface cooperating with the second inclined surface of the movable wall part, wherein the first and second drive means work together to translate the first and second wedges toward and away from each other. None of the cited references, taken alone or combined, discloses a movable wall part having two oblique drive surfaces for engagement with opposed drive wedges that act in opposite directions to move the wall part, as defined in new Claim 22.

New dependent Claim 23 defines the second core part of the second mold part as having at least one pin extending from an upper side thereof, wherein the pin is received in a recess formed in the first mold part when the mold is in the closed position for supporting the second core part within the closed mold. None of the cited references disclose this feature.

Accordingly, for all of the foregoing reasons, it is respectfully submitted that new dependent Claims 21-23 patentably distinguish over the prior art.

Conclusion

In view of the foregoing amendment and remarks, favorable consideration and allowance of the application with Claims 1-13 and 20-23 are respectfully solicited. If the

Examiner believes that a telephone interview would assist in moving the application toward allowance, he is respectfully invited to contact the Applicant's attorney at the telephone number listed below.

Respectfully submitted,

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